Study on the parasitic infections of native chickens of Ilam city, Ilam ,Iran
Nazarbeigy, M.[1*], Eslami, A.[2], Rahbari, S.[2]

1*- Msc Student of Parasitology, Faculty Specialized Veterinary Sciences, Sciences and Research Branch, Islamic Azad Univesity, Tehran, Iran (Maryam.nazarbeigy@yahoo.com)

2 - Department of Parasitology, Faculty Specialized Veterinary Sciences, Sciences and Research Branch, Islamic Azad Univesity, Tehran, Iran

Chickens may be infected with parasitic, viral and bacterial infections. The aim of this study was to determine the fauna, prevalence and severity of internal and external parasites of Chickens in Ilam. In this study, 60 chickens were necropsied. Internal organs, feather and leg skin chips were examined. Feather, leg skin chips, gastrointestinal tract and femur muscle was infected with parasites. The identification of Nematodes was possible after they were cleared in lactophenol and it was possible to identify the cestoda after schneider acetocarmine staining. Isolated parasites from the feather, feathers follicle and leg skin chips were prepared and then examined. To distinguish blood and mucosal parasites, 2 smears and 1cc blood was taken from wing vein. Femur muscle was examined by dob smear while cecum, small and large intestine were smeared and then all were stained with geimsa. A smear from the trachea, trachea bifurcate, and the end of large intestine was prepared and then stained with Ziehl-Neelsen method. Prevalence and fauna of cestoda include: Raillietina echinobothrida 26.6%, Raillietina tetragona 26.6%, Raillietina cesticillus 13.3%, Choanotaenia infundibulum16.6%, Cotugnia digonopora 5.8%.Nematoda, Acuaria spiralis3.3%, Cheilospirura hamulosa 1.6%, Ascaridia galli 30% , Heterakis gallinarum 16.6%, and external parasites: Menopongallinae 55%, Goniodes spp. 18.3%, Lipeurus caponis 53.3% Menacanthus stramineus 58.3%, Goniocotes gallinae 81.6%, Cnemidocoptes mutans 23.3%, Grallobia spp. 33.3%. In non fecal protozoa, 1case of an unknown sarcocyct zoite was collected from femur muscle.

Key words: *Parasitic Infections, Chickens, Ilam City, Iran*

Rapid differentiation of avian infectious bronchitis virus strains by HRM analysis

## Masoudian, A.[1*], Sheikhi, N.[2], Bozorgmehri Fard, M.H. [3]

1- Student of Poultry Diseases, Department of Poultry Diseases, Faculty of Veterinary Science, Science and Research Branch, Islamic Azad University, Tehran, Iran (a.masoudian@live.com)*

2- Department of Poultry Diseases , Faculty of Veterinary Science, Science and Research Branch , Islamic Azad University, Tehran, Iran

3- Department of Poultry Diseases , Faculty of Veterinary Science, Science and Research Branch , Islamic Azad University, Tehran, Iran

Infectious Bronchitis is an acute contagious Coronovirus infection in chicken flocks that causes upper respiratory, renal and reproductive diseases in infected premises. Detection and differentiation of causative agent is essential to plan prevention and control strategies such as vaccination. Because most of detection techniques are time consuming, a real-time polymerase chain reaction (RT-PCR) combined with high-resolution melt (HRM) curve analysis was developed based on the 3'UTR sequence of vaccinal strains as references of IBV to establish a rapid detection and differentiation method for IBV strains. Results showed that the vaccinal reference strains were divided in four groups according to melt curve models for 400 to 430 bp PCR products and calculating Genotype Confidence Percentage (GCP). This Study resulted in an introduction of a geometric and arithmetic model for rapid and reliable classification of IBV strains base on 3'UTR HRM analysis.

Key words: *Infectious Bronchitis Virus, Rapid Differentiation, HRM Analysis*
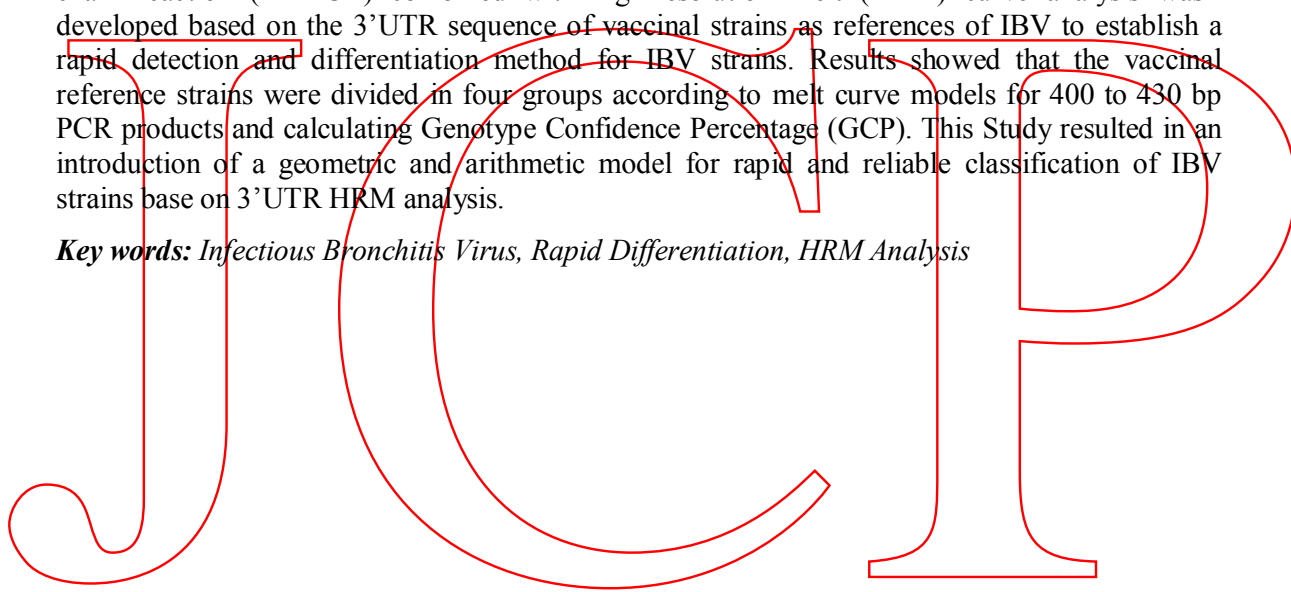
Preventive effects of edible Turmeric powder (Curcuma Longa Linn.) on hepatic steatosis in the rats fed with high fat diet

Kaffashi Elahi, R.[*]

* Department of Clinical Sciences, Faculty of Veterinary Medicine, Tabriz Branch, Islamic Azad University, Tabriz, Iran (raminazad56@gmail.com)

The aim of the present study was to evaluate the preventive effects of Turmeric (Curcuma Longa Linn.) powder on rat high fat diet-induced hepatic steatosis model. For this purpose, male wistar rats were treated in 4 experimental groups including: 1- healthy control group given standard diet, 2- high fat diet group for induction of hepatic steatosis, 3- high fat diet plus Clofibrate (320 mg/kg) as positive control, and 4- high fat diet plus Turmeric powder (5%) for protection of liver steatosis, at a period of 6 weeks. At the end of experiment, the groups were compared considering serum lipid profile, serum biomarkers of liver tissue injury and liver histopathological changes. After 6 weeks treatment, high fat diet caused significant ($p<0.001$) increase in serum levels of triglyceride and cholesterol. In high fat fed diet group, serum levels of hepatocellular enzymes and total bilirubin significantly ($p<0.01$) increased and serum total protein and albumin significantly ($p<0.01$) decreased. Turmeric treatment significantly ($p<0.01$) reduced elevated markers of liver tissue injury and total bilirubin and significantly ($p<0.01$) increased, amounts of reduced serum total protein and albumin. In addition, over accumulation of lipids in serum significantly ($p<0.01$) decreased towards normal. Histopathology of the liver confirmed the changes induced by high fat diet and the hepatoprotective effect of Turmeric powder. The results obtained showed that turmeric powder possesses preventive activities against hepatic steatosis in rats fed with high fat diet.

Key words: *High Fat Fed Diet, Turmeric (Curcuma Longa Linn.), Hepatic Steatosis*

Evaluation of subclinical endometritis in dairy cows using endometrial cytology

Alavi Tabatabaee, S.A.[1*], Bolourchi, M.[2], Ghasemzadeh-Nava, H.[2], Tajik, P.[2]

1- *Post-Graduate Student, Faculty of Specialized Veterinary Sciences, Science and Research Branch, Islamic Azad University(IAU), Tehran, Iran. (a_alavit@yahoo.com)*
2- Department of Theriogenology, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran

The objectives of the study were to validate the use of endometrial cytology to diagnose subclinical endometritis at 70 to 170 days in milk (DIM), in clinically normal postpartum dairy cows. The study population consisted of clinically normal Holstein-dairy cows at 70 to 170 days in milk (DIM), and with no abnormal vaginal discharge based on visual inspection and vaginoscopy. Research procedure was done on 62 non-pregnant cows. On day 21 after a pre-enrollment AI, animals received 100 µg of GnRH, and then examined ultrasonographically 7 days later (day 28). An endometrial sample was collected by cytobrush technique in nonpregnant cows on day 28. These cows were inseminated using timed AI after the completion of the Ovsynch protocol 10 days after enrollment in the study. Pregnancy diagnosis was ultrasonographically done about 28 days after AI in Research group. The result of this study showed that the risk of non-pregnancy was higher in cows with ≥8% PMNs identified using cytobrush technique than in cows with <8% PMNs (P <0.05). In conclusion, subclinical endometritis may occur in many postpartum cows which were clinically normal. Cows with subclinical endometritis resulted in poor reproductive performance. The results of this study indicate that the endometrial cytology will assist in the identification of animals with subclinical endometritis that will benefit from early treatment.

Key words: *Subclinical Endometritis, Endometrial Cytology, Cytobrush, Cows*

Effects of "Metformin" on serum glucose, lipid profiles and oxidative stress in the alloxan-induced diabetic rats

Shafizad, A.[1*], Rezaie, A.[2], Rahbani, M.[3], Mohajeri, D.[4], Rahmani, J.[5]

1*- Graduate of Veterinary Medicine, Faculty of Veterinary Medicine, Tabriz Branch, Islamic Azad University, Tabriz, Iran   (Shafizadeh_ahmad64@yahoo.com)

2- Professor, Department on Clinical Science, Faculty of Veterinary Medicine, Tabriz Branch, Islamic Azad University, Tabriz, Iran

3- Professor, Department on Clinical Biochemistry, Tabriz University of Medical Science, Tabriz, Iran

4- Associate Professor, Department on Pathobiology, Faculty of Veterinary Medicine, Tabriz Branch, Islamic Azad University, Tabriz, Iran

5- Assistant Professor, Department on Clinical Science, Faculty of Veterinary Medicine, Tabriz Branch, Islamic Azad University, Tabriz, Iran

The diabetes type 2 is the most common and growing issue of the world health. The purpose of this study is to evaluate the effects of "Metformin" on glucose, lipid profiles and oxidative stress in the alloxan-induced diabetic rats. In this study 40 Wistar rats, were randomly separated into 4 equal groups, containing: healthy control group, diabetic group, metformin-controlled group, and diabetic rats treated with metformin. Diabetes was induced by single dose of intraperitoneal injection of 120 mg/kg Alloxan. The groups 3 and 4 were fed 150 mg/kg/day of metformin for a period of one month. At the end, blood of all the rats were collected and the serum levels of glucose, triglycerides, cholesterol, LDL, HDL, VLDL, lipid peroxidation products as malondialdehyde index, plus the superoxide dismutase enzymes, glutathione peroxidase, catalase and total antioxidant in blood were measured. Finally, the quantitative data obtained were analyzed by ANOVA and Tukey's post test amongst the groups at $p < 0.05$. In the diabetic rats, metformin decreased the levels of glucose, triglycerides, cholesterol, LDL and VLDL in a meaningful way ($p < 0.001$), while increasing the serum HDL level. For catalase, superoxide dismutase, glutathione peroxidase and total antioxidant, a significant increase ($p < 0.001$) occurred by metformin. Metformin significantly ($p < 0.01$) reduced the amount of lipid peroxidation (malondialdehyde) as well, but was below par. The results showed that Metformin, in addition to hypoglycemic effect, prevents hyperlipidemia of serum induced by diabetes; it also prevents oxidative damages of diabetes by increasing the antioxidant enzymes and decreasing the lipid peroxidation.

Key words: *Diabetes, Metformin, Alloxan, Biochemical Parameters, Rat*

The effect of different sardine and slaughterhouse waste protein hydrolysate concentrations on survival rate and intestine bacterial level of rainbow trout *(Oncorhynchus mykiss)* larvae

Taheri, A.[1*], Abedian-Kenari, A.M.[2], Motamedzadegan, A.[3], Habibi-Rezaee, M.[4], Ojifard, A.[5]

1*- Seafood Section, Fisheries Dept, Faculty of Marine Sciences, Chabahar Maritime University, Iran. (taheri@cmu.ac.ir)
2- Department of Fisheries, Faculty of Marine Sciences, Tarbiat Modares University, Noor, Mazandaran, Iran.
3- Department of Food Science, Sari Agricultural Sciences and Natural Resources University , Sari, Mazandaran, Iran.
4- Department of science, Tehran University, Enghelab Ave, Tehran, Iran.
5- Fisheries Dept, Faculty of Agriculture and Natural Resources, Persian Gulf University, Borazjan, Bushehr, Iran.

This study was conducted to investigate the effect of protein hydrolysate on rainbow trout alevine survival after bacterial challenge. Six diets based on different levels of sardine (*Sardinella gibossa*) protein hydrolysate (SPH) and poultry by-products protein hydrolysate (PPH) (10% , 25% and 50%) were tested. After nutrition period, the gastrointestinal section was separated by the sterile method and content of total count and Lactobacillus bacteria was measured. Also 60 fish was challenged by the *Aeromonas salmonicida* for 24 hours. Intestinal bacterial flour was higher in the FPH 25% and 50% treatments in compare to 10% and control ($p<0.05$). In the study of Lactobacillus bacteria, it is investigated that the control and FPH 10% didn't show any significant difference but higher Lactobacillus bacteria was seen in the SPH 25% and 50% ($p<0.05$). In PPH treatments, maximum bacterial counts was belong to 25 and 50% treatments. Also maximum and minimum lactobacillus bacteria was seen in PPH 50% and 10%, respectively. After challenge with *Aeromonas salmonicida*, the control showed 42.22 ± 4.2 death rate and other treatments, feed by protein hydrolysate, showed lower death ($p < 0.01$). FPH 25% and 10% showed significant differences in relative level of protection by 65.78 ± 6 and 50 ± 2.28 protections, respectively. This factor for PPH 10% and 25% was $59.2 \pm 4.5\%$ and $53.94 \pm 2.8\%$, respectively ($p > 0.05$). Results showed that FPH had better effect than PPH and this two protein hydrolysates in 25% replacement by fish protein in diet enhances the survival and non-specific immunity to *Aeromonas salmonicida*.

Key words: *Protein Hydrolysate, Rainbow Trout, Challenge, Aeromonas Salmonicida, Immunity*

Prevalence of post-partum subclinical hypocalcemia in dairy cows and it's correlation with negative energy balance in suburban of Urmia

Sakha, M.[1]*, Mahmoudi, M.[2], Nadalian, M.GH.[3], Safi, Sh.[4]

1*. Department of Clinical Sciences, Science and Research Branch, Islamic Azad University, Tehran, Iran.
2. Student of large Animal Internal Medicine, Science and Research Branch, Islamic Azad University, Tehran, Iran.
3. Department of Clinical Sciences, Science and Research Branch, Islamic Azad University, Tehran, Iran.
4. Department of Clinical Pathology, Science and Research Branch, Islamic Azad University, Tehran, Iran.

Subclinical hypocalcemia in dairy cattle is decrease in plasma calcium to less than 7.5 mg / dl with no clinical signs. The aim of this study was to determine the incidence of post-partum subclinical hypocalcemia and it's correlation with negative energy balance in suburban of Urmia, Iran. In this study blood sampling was done from 99 multi-parous cows (2 to 5 calving) during the first 48 hours after parturition (to evaluate serum calcium) and second week after parturition (to determine the levels of non-esterified fatty acids (NEFA)).198 blood samples were taken from 99 dairy cattle from 498 cattle population. The incidence rate of subclinical hypocalcaemia in this study was 18.2%. NEFA mean in cows with subclinical hypocalcaemia was significantly ($p < 0.05$) higher than the NEFA mean in cows with normal serum calcium levels. According to the results, the probability of negative energy balance (NEFA> 0.7mmol / L) in cows with subclinical hypocalcaemia was six times higher than cows with normal serum calcium levels. The results showed the bad state of energy balance in dairy cows with subclinical hypocalcemia and probability of negative energy balance induced diseases such as ketosis. Subclinical hypocalcemia increases the sensitivity of dairy cows to mastitis, retained placenta, displaced abomasum, dystocia and ketosis. With attention to limited available information about this disease, further studies are required.

Key words: Subclinical Hypocalcemia, Negative Energy Balance, Dairy Cattle

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آدرس : تهران ـ صندوق پستی ۱۴۱۵۵/۷۷۵ ـ دانشگاه آزاد اسلامی واحد علوم تحقیقات، دانشکده علوم تخصصی دامپزشکی

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